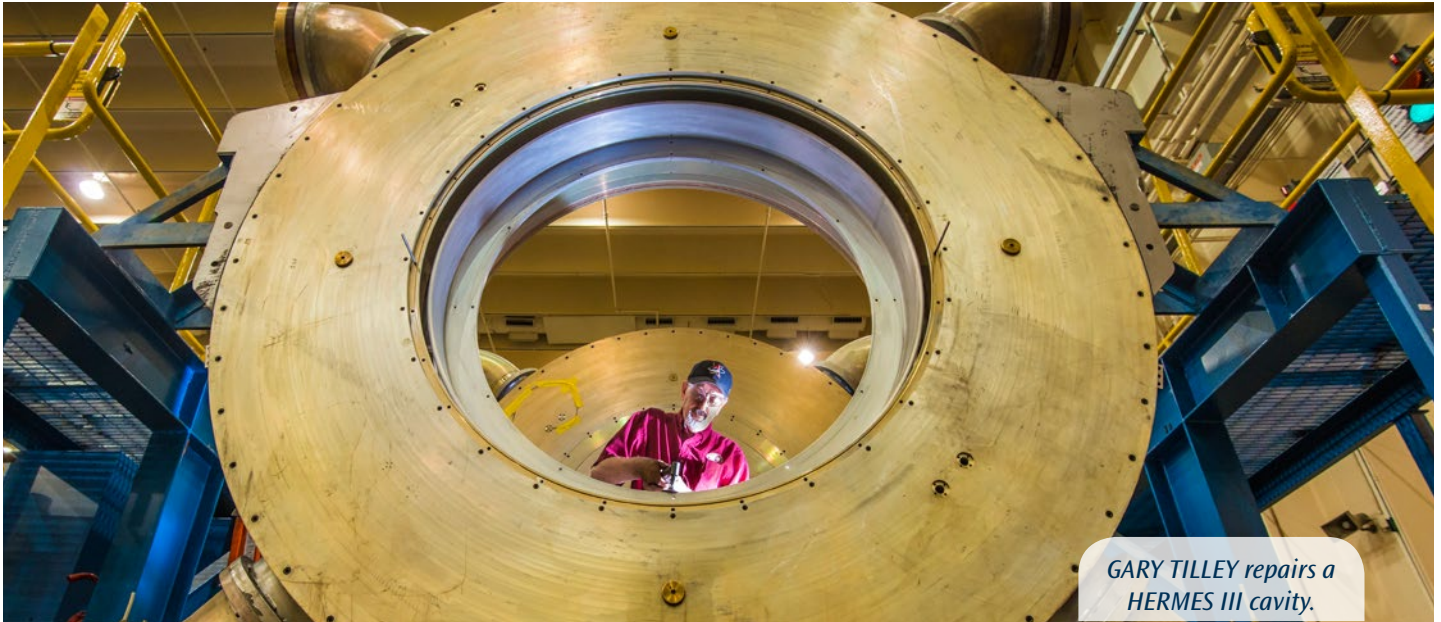


Exceptional service in the national interest



High Energy Radiation Megavolt Electron Source - HERMES III

A method devoted to quantitative research & methodology, Sandia National Laboratories, in partnership with Pulse Sciences, Inc., developed HERMES – high energy radiation and megavolt electron source. HERMES III uses a modular design, operating at about 0.7 TW, to achieve very high peak power levels. Linear induction acceleration, uses isolated inductive cavities coupled to a magnetically insulated transmission line adder to produce high voltage and low currents. The HERMES III accelerator incorporates a sophisticated Performance Measurement and Evaluation System (PMES) that acquires and archives 525 points of single point data on voltage, current, and timing throughout the accelerator on each shot. HERMES III also incorporates a computerized Control/Monitor (C/M) system that monitors the status of the accelerator, minimizing the possibility of accelerator damage caused by operator error.

HERMES III is supported by a large data acquisition system whose calibration is maintained traceable to the National Institute of Standards and Technology (NIST). The data acquisition system consists of 85 digitizer channels of various manufacturers and speeds.

Location of HERMES III

The HERMES III accelerator is housed in the 55,000 ft² Simulation Technology Laboratory (STL). The STL includes a high bay and a low bay, a dosimetry laboratory, light laboratory & office space, and an advanced, pulsed power laboratory. Encompassing both indoor and outdoor test cells, the data acquisition screen room is located on the second floor directly above the dosimetry lab, while the user screen room is located just outside of the exposure test cell providing data acquisition equipment. The outdoor test cell is a free field environment for source region electromagnetic pulse (SREMP) testing.